

C1 - Atomic Structure and Chemical Reactions Quiz

1. How do you work out the number of electrons, protons and neutrons in an atom?
2. Why are few objects made of pure metals?
3. Why is there no overall charge on an atom?
4. Why do all atoms in the same group have similar chemical properties?
5. Why are all group 0 atoms unreactive?
6. What are the differences in the atomic structure of hydrogen and helium atoms?
7. How many electrons can you fit on each shell around the nucleus of an atom?
8. Describe the following reaction in terms of the names of the substances and the number of atoms involved: $2\text{Al} + 3\text{Cl}_2 \rightarrow 2\text{AlCl}_3$
9. State and explain the trend in reactivity down Group 1
10. State and explain the trend in reactivity in group 7.
11. How do ions form?
12. What is a covalent bond?
13. What is an ionic bond?
14. Why does Fe react with CuO but Cu does not react with FeO?
15. What is produced when group 1 metals react with water?
16. Balance this equation: $\text{Ca} + \text{O}_2 \rightarrow \text{CaO}$

17. Balance this equation: $\text{Al} + \text{O}_2 \rightarrow \text{Al}_2\text{O}_3$

18. Balance this equation: $\text{Na} + \text{H}_2\text{O} \rightarrow \text{NaOH} + \text{H}_2$

19. Why must all equations be balanced?

20. Why is the total mass of reactants always equal to the total mass of products?

21. If 8.4g of MgCO_3 decompose on heating, what mass of MgO and what mass of CO_2 will be formed?